AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 to 13 (Cancelled).

14. A control system for determining a combustion temperature of a gas turbine having a compressor, combustion section, a water injector in an inlet upstream of the compressor, and a turbine, said system comprising:

at least one water content sensor in the inlet upstream of the compressor and downstream of the water injector, wherein said sensor is generating data indicative of a variable water content of air entering the compressor,

a processor executing an algorithm for determining the combustion temperature based in part on the data indicative of the water content, and

data and program memory storing the data indicative of water content and the algorithm for execution by the processor wherein said processor generates an output indicative of the determined combustion temperature to control the combustion section.

15 A control system as in claim 14 wherein the control of the combustion section comprises a combustion fuel rate valve responsive to the output.

16. A control system as in claim 14 wherein the at least one water content sensor comprises a dry bulb temperature sensor and a wet bulb temperature sensor.

17. A control system as in claim 14 wherein the gas turbine further includes a water injection system and said control system further comprises a first dry bulb temperature sensor upstream of the water injection system and a second dry bulb temperature sensor downstream of the water injection system.

18. A control system as in claim 17 further comprising a web bulb temperature sensor upstream of the water injection system.

19. A control system as in claim 14 wherein the gas turbine further includes a supersaturating grid of water atomizing nozzles, and said system comprises a web bulb temperature sensor and dry bulb temperature sensor upstream of the grid, and a water flow sensor generating data indicative of a rate of water atomized by the nozzles.